ENGINEERING NEWS-RECORD

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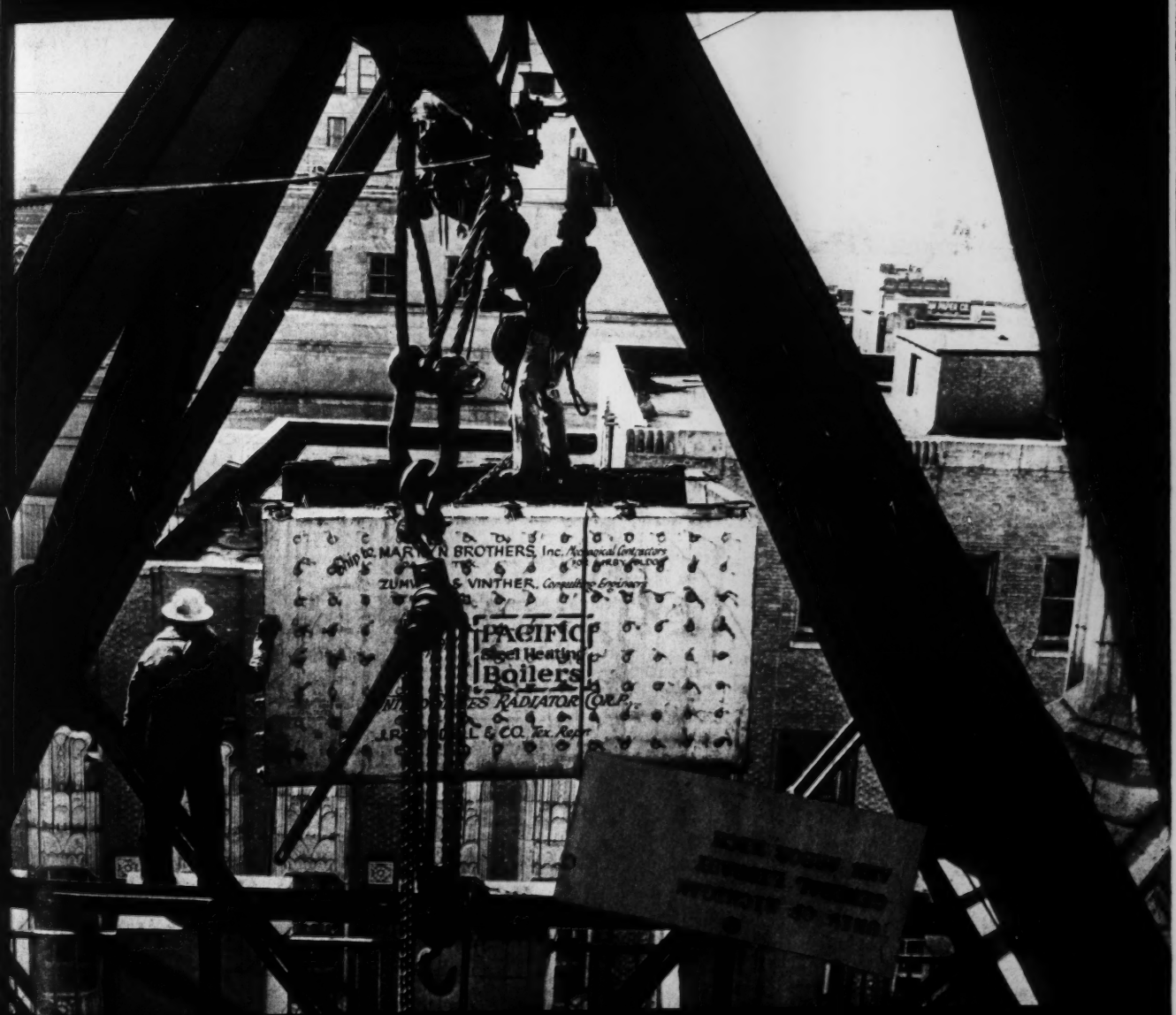

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1847 1947 A CENTURY OF SERVICE to Industry THAT MADE America Great

News of the Week

ENGINEERING NEWS-RECORD • MARCH 13, 1947 • VOLUME 138 • NUMBER 11

Engineers present views on changes in Wagner Act

Definitions of professional employees and provisions requiring the segregation of such employees favored in testimony before Senate committee

Representatives of six major engineering organizations and of the American Institute of Architects were among the speakers for professional groups heard last week by the Senate's Labor and Public Welfare Committee, which is considering amendments to the National Labor Relations Act.

Changes in the act that were sought by engineers at the hearing are contained in the Ball Bill (S. 360) (*ENR* Feb. 13, vol. p. 241). A similar bill (H.R. 1754) has been introduced in the house by Representative Hinshaw of California.

Both bills add to the act a definition of the term "professional employee" and provide that the National Labor Relations Board, when making a determination of "appropriate bargaining units" shall not group professional employees with non-professionals. The bills also classify with the professional employees the men now commonly designated as "engineers-in-training."

Only significant opposition to the amendments affecting professionals came during the hearings from Paul M. Herzog, NLRB chairman. He criticized the proposed revision because it would force professional workers into separate bargaining units, whether they preferred that course or not. He said it has been the board's practice to poll the group as to their preference, and "very rarely" has it directed merging "real professionals" with other employees.

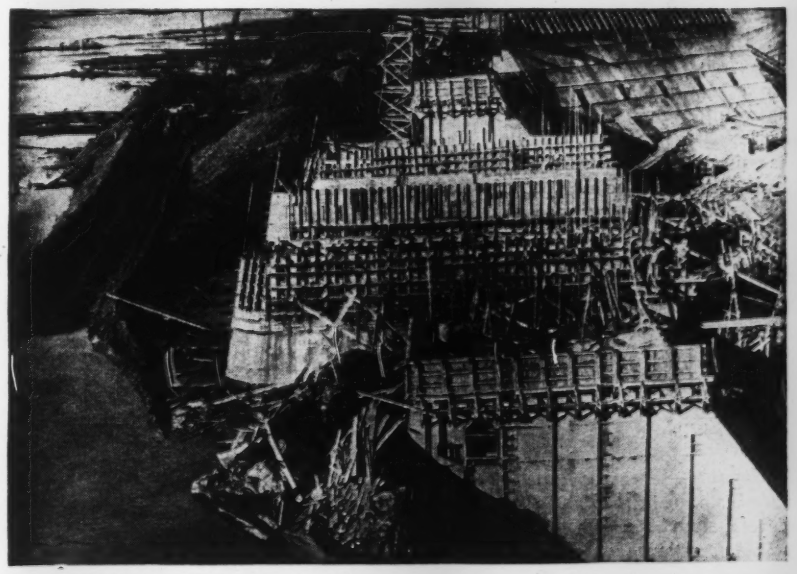
Engineers' view

E. Lawrence Chandler, eastern representative for the American Society of Civil Engineers, gave the Senate committee the joint views of the engineering groups. He specifically endorsed sections of S. 360 that would assure professional and so-called "junior" professional employees their own separate bargaining units and their own bargaining agents; keep them independent of non-professionals, and permit them to refuse union membership without jeopardy to their right to work on particular jobs.

Chandler testified that the engineering societies have tried, with little success, "to chart courses of conduct which will permit such (professional) employees to enjoy the opportunities apparently intended under the provisions of the Wagner Act, and to avoid the pitfalls into which, from time to time, they have fallen to their detriment."

Stressing the intellectual and varied character of professional services, he said the difficulty with the Wagner Act is that no distinction is made between professional and non-professional personnel, "in spite of the fact that their viewpoints and abilities are inherently different and their condition of employment cannot be made subject to a common standard."

The six societies which joined in the testimony included the ASCE, the American Institute of Chemical Engineers, American Society of Electrical Engineers, American Society for Engineering Education, American Society of Mechanical Engineers and National Society of Professional Engineers.



***Work Begins on Power Project**—Development of the power resources of the Campbell River on Vancouver Island has been started by the British Columbia Power Commission. Here shown is the dam at the outlet of Irene Pool, a combination concrete and earth-fill structure with sluiceways through the concrete section capable of passing 50,000 cfs. From an intake structure in the earth dam, the first of three 12-ft. wood-stave and steel pipe lines extends about 6,000 ft. to a power house where the first of an ultimate installation of six 25,000 hp. reaction turbines is to be made. H. G. Acres and Company, Niagara Falls, Ont., are the engineers.*

NEWS IN BRIEF

In telegraphic form, here are latest news developments on the engineering and construction front during the week.

Public construction—A $2,500,000 bond issue for three new school buildings has been approved at *Peoria, Ill.* . . . Grey Nuns of the Sacred Heart will build a hospital and nurses' home at *Washington, D. C.* to cost $1,500,000. . . . Augustana College, *Rock Island, Ill.*, is planning a fine arts building and concert hall and dormitories to cost $1,500,000. . . .*Edina* and *Morningside, Minn.*, have approved bond issue of $1,250,000 for a junior high school . . . University of Washington, *Seattle, Wash.*, is receiving bids for the construction of an $830,000 electrical engineering building.

Industrial construction — John A. Roebling's Sons Co. will invest $2,000,000 in an electrical wire plant at *Trenton, N. J.* . . . Pure Oil Co. will undertake a $9,000,000 expansion of its refinery at Smith's Bluff near *Nederland, Tex.* . . .The Pacific States Steel Corp., *Niles, Calif.*, has announced plans for a $2,000,000 expansion to house additional rolling mill equipment . . . W. P. Fuller & Co., *South San Francisco, Calif.*, has awarded contracts for a $1,000,000, 3-story expansion of its paint factory . . . L. A. Young Spring & Wire Corp., *Oakland, Calif.*, has purchased a 17-acre site and will undertake construction to cost $1,500,000 . . . J. C. Penney Co. will build a 4-story store building at *Jackson, Miss.* At *Toledo* the Campbell Co. will build a $5,000,000 soup plant. . . . Corning Glass Co. will build a large new plant at *Muskogee, Okla.* . . . A $1,000,000 building permit has been issued for remodelling the Union Building, *Syracuse, N. Y.*, for the McCrory Stores Corp.

Housing—The John Hancock Mutual Life Insurance Co. has an 800-unit home development at *Brookline, Mass.*, which will be radiant-heated, the floors and ceilings being used as radiators . . . The biggest housing project ever undertaken in Canada, with veterans' preference, is planned by Housing Enterprises of Canada, Ltd., on property partly in *Montreal* and partly in the *Town of Mount Royal*, over $6,000,000 being involved . . . Work on a 74-unit apartment building at *Moline, Ill.*, will start late in May. . . .Two large housing projects have been announced at *Seattle, Wash.*, with Nadreau & Co. to build a $2,500,000 development of 224 homes and Carroll, Hillman & Hedlund planning a $1,000,000 garden court apartment. — John H. McClatchy, *Upper Darby, Pa.*, announces that residential developments to cost well over $1,00,000 will be built in Philadelphia and in Delaware County. . . . A 300-unit house and apartment development on a 50-acre tract in *Louisville, Ky.*, will cost several million dollars.

Water and sewerage—F W A has approved an application for a $152,250 sewer extension project at *Plant City, Fla.* . . .*Huntingdon, Tenn.*, will spend $85,000 to improve its water system. . . . Alvord, Burdick & Howton, Chicago, Ill., have a contract to make a survey of the sewerage system of *Jefferson County, Ala.* . . . Plans for the complete electrification of the Crescent Hill station of the Louisville Water Co., *Louisville, Ky.*, at a cost of $400,000 have been announced. . . .*Ocala, Fla.* will sell $700,000 of revenue certificates to finance a new sewage treatment plant and to improve the waterworks system. . . . FWA has advanced $20,000 to *York, Pa.*, for plans for a new sewage disposal plant to cost about $1,500,000. . . . *Marion, S. C.*, is to vote on a $250,000 bond issue for improvements to include sanitary and drain sewers and related works.

All A.W.W.A. nominees become officers-elect

Under provisions of the organization's constitution, N. T. Veatch on March 1 became president-elect of the American Water Works Association. Linn H. Enslow became vice-president-elect and William W. Brush became treasurer-elect at the same time.

L. H. Enslow

N. T. Veatch

The three men were nominated by AWWA committee recently, and under provisions of the constitution, the nominees now become officers-elect, beginning their terms on July 1. They will be seated officially at the organization's annual convention at San Francisco July 21-25.

Mr. Veatch, now vice president of AWWA, is a member of the firm of Black & Veatch, of Kansas City, Kan. Mr. Enslow is editor of *Water and Sewage Works* and Mr. Brush, editor of *Water Works Engineering* will begin serving his 22nd term as treasurer of the organization.

Canadian contractors handicapped by shortages

With the house-building season just around the corner and an all-time high of home orders on their hands, contractors of Montreal, Canada, are watching the local supply situation very closely to see how many of the orders they are going to be able to fill.

There will apparently be plenty of nails, but no bathtubs; plenty of roofing materials, but very little construction lumber; heating systems, but no pipes. Cement is abundant, but insulating materials will continue in short supply throughout the year.

Situation dark

A survey of Canadian industries that cater to the building trade reveals that although the situation in some items has improvement over last year, in most cases it is worse with little sign of any early relief.

Here is the situation according to construction officials:

Nails—Plenty to carry out all housing programs for 1947; plumbing—Situation worse than 1946; roofing—Better than last year but certain types still scarce; wiring—Little improvement over last year; piping—Still in short supply.

A spokesman for the lumber industry said there is no change in the supply over last year when lumber for home-building was at a low ebb. Demand will more than equal any increase in supply this season.

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Labor disputes continue to be settled as states advance control legislation

Wage increases granted in most compacts—State legislators act on restrictive measures—Warnings of labor shortages sounded

With the advance of the spring construction season, labor disputes at scattered points throughout the United States were reported being settled, in most cases on the basis of increases in basic wage rates.

As these reports were made public, many state legislatures paid increasing attention to measures restricting labor activities.

Against the background were predicted shortages in the construction labor market.

At Cleveland, Ohio, four of the 21 building trades unions—electricians, plasterers, lathers and tilesetters—had signed agreements for new contracts, while builders reported negotiations moving forward "satisfactorily" with 17 other organizations. The four unions demand top rates for Cleveland construction workers—$2.12½ per hour, except for tilesetters who get $2.00 per hour. Most of the unions which have not yet signed are demanding increases ranging from 12½ to 25 cents per hour.

At Seattle, Wash., the National Electrical Contractors Association and the International Brotherhood of Electrical Workers in Washington, Oregon and northern Idaho, agreed to general wage increases ranging between 20 and 35 cents per hour. In Phoenix, Ariz., union electricians ended a week-long strike when they agreed to accept arbitration on their demands for a 25 cent per hour increase. And at Wilmington, Del., electrical workers accepted a 20-cent per hour raise.

Union carpenters at Orange, Texas, agreed to accept a 25 cents per hour increase; and at Louisville, Ky., union members voted to end a strike for more wages when their international union headquarters threatened suspension on the ground that the strike was in violation of no-strike agreements.

At Wilmington, Del., union plumbers received an award of a 25 cent per hour increase, as did steamfitters. And at San Diego, Calif., workmen pushed construction of the 72-mile San Jacinto-San Diego aqueduct pending settlement of a jurisdictional dispute as to whether members, or carpenters should set curb forms for the tunnel.

Legislation advanced

While these settlements were reported, many state legislatures were considering measures to control labor. In Texas, legislative committees recommended passage of bills prohibiting the closed shop; and other bills would permit court injunctions against "those who seek to intimidate or picket employees of a utility who desire to work", and outlaw secondary, or sympathy strikes.

Tennessee two weeks ago became the fourth state to make into law a provision prohibiting labor contracts that call for a closed shop in manufacturing or other employing establishments. Similar statutes now exist in Arizona, Nebraska and South Dakota, and several other states—among them Georgia—last week were reported considering such laws.

In New York State, the legislature began consideration of the Condon-Wadlin bill which would bar strikes by any public employees in the state. Observers said the measure was a direct result of recent strikes by teachers' organizations at Buffalo, and threats of similar strikes elsewhere. Under provisions of the bill, any such employee who goes out on strike automatically forfeits his job, unless "responsible authorities" decide to reinstate him.

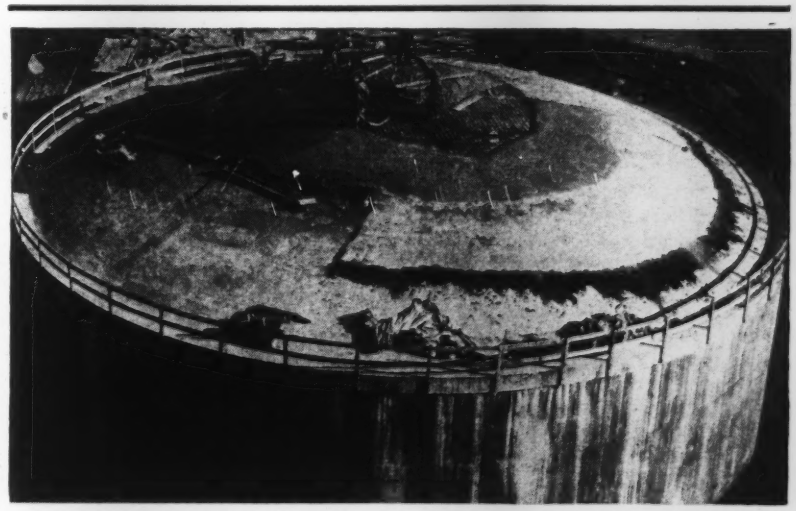
In Arizona, where union labor has already started court action against the state's anti closed-shop law (*ENR* Feb. 27, vol. p. 337), labor leaders told newspapers that they will oppose six other measures now up for consideration in the legislature. These measures would ban certain types of picketing, secondary strikes, require publication of financial statements and forbid organization strikes.

Labor shortages seen

Predictions of possible labor shortages came from scattered points. In Detroit, the Michigan Unemployment Compensation Commission said building contractors would require "several thousand" more men as construction gets under way. In western New York State, building trades unions and employers were apprehensive as to the availability of skilled men, and unions at Buffalo and Rochester promised acceleration of apprentice-training programs in an effort to meet the need.

Oregon authorizes dam for Idaho Power Co.

Overriding the governor's veto, the Oregon legislature has passed a bill which amends the hydroelectric commission act to allow the Idaho Power Co. to construct a $12,000,000 power dam on the Snake River in Eastern Oregon. (*ENR* Feb. 27, vol. p. 337). As written into law, the bill provides for retention of private ownership for 50 years as against the previous two years required before a public utility district could take over the operation.



***Sprayed Concrete Dome**—The cover for a 1,000,000 gal. water tank at Olmsted Field, Middletown, Pa., for the Army Air Force is made by spraying mortar over a formed dome reinforced with wire mesh. Work is being done under supervision of the U. S. Army District Engineer at Baltimore. General contractor at the field is Brown, Davis and White of Lebanon, Pa., and the 85-ft. dia. tank is being built by the Preload Corp. of New York.*

DEVELOPMENTS BEYOND U. S. BORDER

Digested from reports by Engineering News-Record correspondents and the McGraw-Hill World News Bureau

Australia completes one large bridge, announces plans for another —Russia opens bridge engineering institute—Port development planned in Spain and China—Britain pushes manufacture of concrete railroad ties—Other foreign news

Australia—Completion of a major railroad bridge, said to be the third largest such steel bridge in Australia, and plans for a highway-railway bridge that will be half again as long as the famous Sydney Harbor Bridge were announced last week.

The completed structure was built by the railway department of New South Wales to span the Hawkesbury River, only 200 ft. from where a bridge built by the Union Bridge Co. of New York in 1886-1889 still stands (See *Eng. News* Feb. 13 1886, p. 98 and May 8, p. 298,). A highway bridge, a few miles downstream, was completed last year (*ENR* Dec. 27, 1945, vol. p. 864).

The structure has two 448-ft. steel K-type trusses, each of 1,660 tons weight; four 350-ft. steel Pratt type trusses, of 1,050 tons; two 147-ft. steel Pratt type trusses of 260 tons; and two 75-ft. reinforced concrete approach spans, to make the total length of the bridge 2,764 ft.

Piers near the shore rest on caissons sunk to rock at depths of about 100 ft., using compressed air to permit work inside caissons. The five piers in the central part of the river are 51 x 29 ft. in plan, and were sunk by open dredging, through eight cylinders, to a depth of about 175 ft. below high water where they are founded in coarse sand.

Erection of the spans was done on falsework set up at a dock area hewn out of rock near one end of the bridge. Completed spans were picked up on a timber falsework built up on barges. Each span had to be maneuvered across the river on a rising tide, turned to a 90 deg. angle to enter between the piers, and then lowered to rest on the bridge.

The old American-built bridge on the site had developed serious weaknesses in its more than 60 years of service, necessitating the duplication of the crossing. Salvaged steel from the bridge will be used on secondary lines of the New South Wales railroad system.

Plan high-level bridge

Information on a proposed new high-level bridge to span the Burdekin River in Queensland to be half as long again as the 3,700-ft. long Sydney Harbor Bridge was contained in a report by J. R. Kemp, Coordinator-General of Public Works for Queensland.

The bridge will be a dual-purpose rail and road structure, and will be erected 330 ft. above an existing low-level bridge. It will be built on nine piers and two abutments, and consist of ten main truss spans, each 250 ft. in length, with trestles serving as approaches to the main span. The steel superstructure will accommodate a single-track railway line and a concrete roadway with a 22-ft. width between curbs.

Trusses are designed for E60 Cooper railway loading.

Preliminary construction cost estimates are in the neighborhood of $5,000,000.

Foundation tests were under way during 1946, and a recent order-in-council authorized construction.

Bridge Engineering . . . .

Russia—The laboratory of the Leningrad Institute of Railway Engineering —one of the oldest higher educational institutions in Russia—has been reorganized into an Institute of Bridge Engineering.

The research students of the new stitute will have as a "handbook" l ingrad's 450 bridges spanning the n erous canals and tributaries of the N River, in whose delta the city l Probably no other city in the w has so many and so diversified an ar of bridges, many of which are uni in design and execution. In this c gory is the 400-meter Volodar Bridge, first in the country on wh concrete-filled metal tubing was ployed.

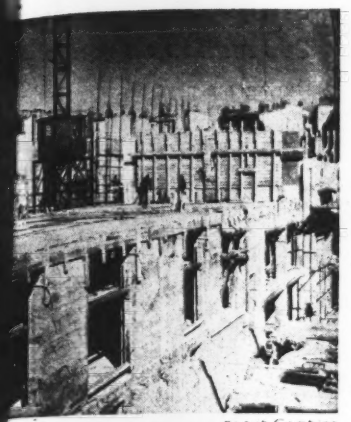
Railway Development . . .

England—Production of concrete r road ties is to be pushed in a num of new factories to alleviate a cur shortage of timber ties which confr British Railways.

G. R. Strauss, parlimentary secre to the Ministry of Transport, said t an annual production quota of a mil such ties has been set, but it is expected that this figure will be attai in 1947.

The wartime accumulation of defe right-of-way maintenance is of s magnitude, Mr. Strauss pointed that it can hardly be overcome wi the next five years. Where, before war, renewals amounted to about million ties, during the war years had to be cut to slightly under 3 mill so that by the end of 1946 total arr age of 10 million ties has been accu lated. Virtually the only outside sou

***Australian Railway Bridge**—Said to be the third largest steel rail structure in Australia, this 2,764-ft. steel-truss bridge was recently comple by New South Wales, to span the Hawkesbury River.*



British Combine

***ncrete Apartments**—French engineers w the use of reinforced concrete for an artment development at Orleans as a parture from established building methods that country. The four-story building, part government-sponsored civilian redevelop- nt plans, are poured in pre-assembled ms that provide spaces for window and or openings and for all utilities*

wooden ties now available are the ited States and Canada.

Only one type of concrete tie—a pre- essed design—has so far proved cap- le of standing up to heavy main line vel. Objections have been raised to l forms of concrete ties, however, be- use of the difficulty of using them electrified territory where sections e track circuited.

The Great Western Railway has been perimenting with prestressed rein- rced concrete "sleepers" since 1943. d now has some two miles of track laid th them; and the LMS lines are also rrying out experiments with these ties.

orts and Harbors . . . .

Spain—The Spanish government, rough its Ports Works Committees, s recently authorized the expenditure about $809,000,000 (at official ex- ange rates) for modernization and provement of six Spanish seaports. The ports of Barcelona, Bilboa, La oruna, Cartagena, Malaga and Santa uz de Teneriffe are to be included in e modernization program.

France—A plan to convert Paris into full-fledged seaport has been revived statements by delegates to the Na- onal Assembly. The project would ll for dredging the Seine River for ore than 100 miles, and modifying ost of the bridges between Paris and ouen so that large ocean-going vessels ay bring their cargos directly to the apital instead of trans-shipping them barges or railroads. Proposals to eepen the Seine have been under study since 1910, abandoned during the first World War and then revived in 1939. Before any work could get underway, however, World War II broke, and the dredging project was discarded a second time.

Australia—The Tasmanian Marine Board has approved the expenditure of about $1,650,000 as the first installment on the reconstruction of Hobart Harbor to make it the only port in Australia capable of berthing the largest ships now afloat.

China—Plans for the development of the port of Tangku—30 miles east of Tientsin—into a port capable of rivalling or even surpassing Shanghai have been announced by the Chinese government. According to official sources, the new port would be able to accommodate four 30,000-ton ocean vessels, and to undertake construction and repair of vessels ranging between 3,000 and 10,000 tons. Located at the mouth of the Hai River, Tangku was selected as site for a major port by the Japanese, who actually began work on it in 1940 but succeeded in completing only half of their plan when the war ended.

Power . . . .

Scotland—The North of Scotland Hydro-Electric Board has presented a construction scheme to parliament, calling for expenditure of about $2,800,000 for the construction of a reservoir and power station in Glen Tarsan, on the River Ruel. Installed capacity at the power plant will be 6,000 kw.

Peru—The Lima Light and Power Co. has authorized the construction of a new $12,000,000 hydroelectric plant at Chosica, 35 miles up the Rimac Valley from Lima. The increasing power demands of the capital resulted in a decision to erect the 63,000-kw. unit.

The work will be carried out in conjunction with Motor Columbus—a Swiss concern engaging in design and financing of hydro projects—and the Cia. Italo Argentina de Electricidad, of Buenos Aires.

Cyprus — The colonial office reportedly has approved plans for the establishment of a central power station and grid system, to cost between $8,000,000 and $12,000,000 to supply the island communities with power.

Egypt—A contract for construction of a power station at Aswan Dam, 500 miles south of Cairo, has been awarded to the British firm of Thomson, Houston Co., Ltd., at a reported low bid of about $29,000,000. Original estimates of the Egyptian government were $40,000,000.

The installation (*ENR* Aug. 15, 1945, vol. p. 202) is planned for completion in four years and will be the largest hydro-electric development in Africa.

Highways . . . .

Venezuela—The C. A. Obras Avenida Bolivar was organized recently at Caracas to supervise the construction of a $50,000,000 Bolivar superhighway which will cut across the congested business district of the city.

India — The Central Government's Standing Committee on Finances for Roads has approved proposals for expenditures of $114,000,000 over a 5-year period for highways in India.

Bolivia—The U. S. Export-Import bank has announced approval of a 3,000,000 extension of credit to the Bolivian Development Corporation for use in highway work and petroleum development.

Paraguay—The government has appropriated about $160,000 to finance resumption of construction on the uncompleted portion of the Asuncion-Encarnacion highway, a 30-mile stretch between San Ramon and Coronel Bogado receiving top priority. The work will carry the country's principal highway to the Paraguay Central Railway.

***Argentine Granary**—Because agriculture is not emphasized in Argentina's proposed five-year industrial development plans it does not follow that this vital industry is neglected. This modern 2.5 million bushel elevator at Villa Constitucion is one of a series planned by the government. Of reinforced concrete, it was built by Christiani and Nielsen Cia., Argentina de Construcciones, S. A.*

Pearl Harbor-Honolulu superhighway resumed

The territory of Hawaii, which expects to spend upwards of $8,000,000 on new roads this year, will soon add another length to the super highway connecting Pearl Harbor and Honolulu.

A .35-mile section of the 8-lane divided highway running along the waterfront of downtown Honolulu will be started at an early date. The cost is estimated at $1,270,000 to be borne $720,000 by the territory, $550,000 by the federal Public Roads Administration. (During the war, the highway was built from Pearl Harbor to the outskirts of Honolulu.)

Construction is also scheduled to start soon on a 2-mile $800,000 stretch of mountain highway above Honolulu which ultimately will be used as approach to a vehicular tunnel through the Koolau mountains.

This will be the top item on a system of 501 miles of secondary roads recently approved for Hawaii by the PRA. For initiating construction of this system $1,462,460 is available, half provided by the territory, half by the federal agency.

California acts against unscrupulous builders

The licenses of 18 California contractors were revoked and 20 suspended in the first three months of the current fiscal year in a state contractors' license board drive against "illegal or unethical practices of unscrupulous home builders."

The board also reported it brought 51 criminal prosecutions in which verdicts of guilty were returned and 155 additional cases in which settlements were obtained without prosecution.

E. E. Zeiss, registrar of the board, reported that the most frequent complaint against contractors is "stalling."

"While there is a legitimate excuse for non-availability of certain building materials," Zeiss said, "often a contractor purposely delays construction, hoping that the buyer will become discouraged and relinquish the contract, thus making it possible to resell the house at a higher price.

Charges of abandonment of contract can be brought against contractors in such cases, he said, and unless "reasonable diligence" can be shown licenses may be revoked or other action taken by the license board.

Another complaint commonly heard is against contractors who start a few houses, then accept deposits from all comers for use as working capital.

Road work cost in N. C. has doubled in 6 years

A study by the North Carolina Highway Commission shows that on many unit jobs it paid over 100 percent more in 1946 than in 1940. Chairman A. H. Graham says the survey shows that the commission paid 148 percent more in 1946 to clear an acre of trees than in 1940, and that grading. The removal of unclassified excavation and placing in a nearby fill cost 136 percent more. The price of clearing out stumps went up 125 percent. In bridge work, the cost of placing concrete increased 92 percent, and reinforcing steel 81 percent. The cost of building concrete headwalls on the end of drainage pipes has jumped 100 percent, and the cost of laying 18-inch concrete pipe has increased 92 percent. Cost of liquid asphalt materials has risen 101 percent, and putting sand asphalt pavement in place costs 45 percent more.

Plan new bridge to span the Mississippi River

Plans are being prepared for construction of "The Golden Eagle" bridge across the Mississippi River a few miles north of St. Louis, Mo., It will lead into the southern tip of Calhoun County, Ill., river-locked area between the Mississippi and the Illinois rivers.

The Missouri State Highway Department has approved plans to build a connecting link from the bridge approach to the Missouri highway system at St. Charles. The Illinois State Highway Department has been requested to extend Illinois Routes 100 and 96 to the bridge approach. The new bridge structure would provide a direct route from St. Louis area north to the Illinois cities of Quincy, Galesburg, Rock Island, and others, as well as to Hannibal, Mo., and Keokuk, Davenport, and Burlington, Iowa.

Quebec-Levis Bridge to cost $18 million

P. L. Pratley, Montreal, engineer for the proposed new Quebec-Levis Bridge, estimates that the cost of the bridge will be $18,000,000 and that four years will be necessary for construction.

If the new bridge is constructed according to present plans, it will be the third largest in the world. The span will be 3,200 ft. in length with a clearance of 150 ft. from the water and a 500-ft. clearance from the nearest pier to the side of the main channel in the river.

British Columbia spend $40 million on roads

During the next three years the ernment of British Columbia will sp $13,250,000 per year on roads, acc ing to Herbert Anscomb, finance m ter. In addition, Mr. Anscomb said was putting through a $5,000,000 bill for repair and renewal of brid throughout the province.

This is entirely apart from big r contracts now under way, including Pine Pass and the Hope-Princeton p ects, which will take over $10,000 each.

Mr. Anscomb declared that, on basis of present expenditures for h way, all the money that motorists o tribute to the treasury is now going roads.

More Ohio River bridges proposed in Indiana

Indiana House Bill 359, which ca for an appropriation of $5,864,000 set up an interstate bridge fund building bridges over the Ohio Ri at Cannelton, Mauckport and La renceburg, and one across the Waba River at Mount Vernon, appears have a good chance of passage.

Construction of the bridges wo open up large trade territories Southern Indiana and add to the e nomic wealth of the state.

Connecticut publishes state building code

The first state-sponsored buildi code of its kind was published by t Connecticut State Housing Author last week, as the culmination of a year study of the problem.

The code is not mandatory, but adopted by individual communities w have the effect of law. Under provisio of a measure adopted by the state leg lature in 1945, cities may adopt the n code rather than formulate revisio to their own existing statutes.

The new code utilizes references t nationally accepted standards such a those made public by the Underwriter Laboratories, Inc.; National Fire Pr tection Association, American Socie of Mechanical Engineers, Americ Society for Testing Materials, Americ Standards Association and others. Sin those national standards that are pa of the code are modernized continuall the state code provides that such r visions become part of it as such r visions are adopted by the standard groups.

Special session meets in California to consider $2.8 billion road work

Many tax increases proposed to help finance program—Large highway projects listed in other states

California legislators met again in a special highway session (*ENR* Jan. 9, vol. p. 47) on March 3—two weeks earlier than the date set for reconvening the regular session after its February recess. Waiting for their attention was Senate Bill No. 5, an omnibus bill into which the main features of a $2,800,000,000 highway program advocated by the Collier committee (*ENR*, Nov. 7, 1946, vol. p. 609) and Gov. Earl Warren were consolidated just before the recess.

This bill would initiate a state expressway system of 3,238 miles, 3,170 of which are in the present state highway system, the extra miles being added in the Los Angeles and San Francisco-Oakland metropolitan areas. It would jump taxes in several brackets and reorganize the system for distribution of tax revenues.

Tax increase opposed

Most controversial are the tax-boosting features, fought bitterly by oil and trucking interests. The measure would increase gasoline taxes from 3 to 5 cents per gallon, diesel oil taxes from 3 to 7½ cents a gallon. Registration fees would be doubled from $3 to $6 per vehicle. Drivers' license fees of $5 for three years would be imposed for the first time; chauffeur's fees raised from $1 to $5 for that period. Weight and mileage taxes for trucks and buses would be set up, with trucks, trailers and buses weighing less than 14,000 lbs. being subjected to annual taxes graduated from $6 to $52; vehicles over 14,000 lbs. to mileage taxes at rates from 5.6 to 14.6 mills per mile.

An unladen weight tax and a 3 percent gross receipts tax would be repealed.

The Collier committee pointed out that the existing system of taxes discriminates against pleasure-vehicles, pointing out that it relies primarily upon gasoline taxes although gasoline consumption does not increase proportionately to the gross weight of the vehicle.

The bill would raise an estimated $86,000,000 annually in new revenues. Total revenues for the 10-year period would be $2,106,410,000. This amount, together with federal aid and money raised by local governing bodies, is expected to approximate the sum needed for highway construction.

Under the new system, $5,400,000 annually would go to the counties divided on the basis of vehicle registrations, equivalent to a present apportionment of registration and weight fees. The present 1 cent share of the gasoline tax would be increased to 1⅜¢.

Cities would receive ⅝ cent of the gasoline tax, apportioned on a population basis, compared with a present ¼ cent share. No money is earmarked for state highways in cities—¼ cent now goes for that purpose—but the state is charged with constructing and maintaining these routes.

Record-breaking year in Montana

The year 1947 will be the biggest highway construction year in the history of Montana, it is indicated by statistics released by the Montana State Highway Department.

The state originally planned to award highway contracts totaling about $18,950,000 last year but was able to award only $5,839,000 because of various restrictions and shortages. The 1946 program included 317 miles of grading, surfacing and oiling projects.

Available for expenditure in 1947 and 1948 is the bulk of funds originally set aside for a 3-year $46,000,000 program.

A proposal for a privately financed 4-lane "airline" highway costing upwards of $20,000,000 between Oklahoma City and Tulsa, has been presented to Gov. Roy J. Turner.

As tentatively outlined, the project would cost somewhere between $20,000,000 and $30,000,000 and would necessitate no cash outlay on the part of the state. The project would be surveyed, planned and completed under the supervision of an Oklahoma turnpike authority.

Other work planned

The Arkansas legislature has approved two bills appropriating $27,075,000 for each year of the coming biennium for highway department and other construction purposes.

The Virginia Highway Department will advertise for bids on 14 projects which are among 82 for "back roads" planned for the spring and summer.

A $2,000,000 Pennsylvania state highway improvement project for Route 22 between Speeceville and the east end of Clark's Ferry Bridge, Dauphin County, is being planned. The projects includes relocation of a railroad underpass and the moving of approximately 6,420 ft. of trackage of the Pennsylvania Railroad.

Ross Dam Progresses—*Work on the second step of the Ross Dam storage structure on the Skagit River (ENR Sept. 20, 1945, vol. p. 378) being built for power development for Seattle, Wash., recently reached the stage shown in this picture. The floodlights and observation post in the aerial shelter (upper right) are supported by cables. The Board of Public Works has authorized the filing of a formal application to the Federal Power Commission for a permit to extend the dam's height to El. 1620, the maximum possible on the present base. Future plans call for strengthening the base and increasing the height so that 3,450,000 ac. ft. of storage will be provided in a 40-mile-long lake extending beyond the Canadian border.*

HIGHLIGHTS OF MUNICIPAL DEVELOPMENTS

A summary of current activities in city engineering and construction

Detroit, Cleveland, Baltimore, Kansas City, New Orleans plan huge roads, civic center programs—Denver to ask vote on $23 million water project—Memphis to spend $5 million on parks—Low engineer pay hurts sewerage plans at Columbus, Ohio

With the double objective of civic beautification and easing of growing downtown traffic congestion, five more cities last week reported progress on improvement programs that will involve the expenditure of millions of dollars for construction.

Detroit, Mich., for example, had completed plans for a $28,000,000 program which has as its central feature the construction of a six and one-half-mile riverfront drive extending from the business district to the eastern city limits.

Of a total area earmarked for the program involving some 1,139 acres of land, the city will hold 730 acres for the roadway and for park strips. The remaining area will be assigned for industrial use and for housing projects and residential areas. Among projects being considered for this marginal area is a huge stadium that might house the 1952 or 1956 Olympic Games. The city plan commission is currently carrying on negotiations with the War Department for permission to extend the harbor line by 400 ft. near the Belle Isle Bridge, as part of location for the new drive.

In New Orleans, the city council unanimously adopted an ordinance calling a special election for April 15 on the issuance of $23,500,000 in bonds to finance the city's share of a proposed Union Station and grade separation project, and for street improvements and acquisition of a site for a civic center.

Columbus, Ohio, got a green light from state authorities to proceed with plans calling for multi-million dollar highway work, including the reconstruction and elevation of Lower River Road and a $12,000,000 project to widen and extend Route 25 which crosses the city from Paddock Road to Ludlow Avenue.

Kansas City work

Another important street program was announced by Kansas City, Mo., where the Citizens' Bond Committee presented to city officials a series of recommendations calling for considerable bridge construction and reconstruction, and widening and extending of existing streets and traffic through-ways. The largest single job recommended in the program was $1,475,000 for completion of the Fifteenth St. Viaduct over railroad yards.

The committee also told officials that the city should issue $4,500,000 in bonds to finance construction of parks, swimming pools and recreational centers.

At Baltimore, Md., city officials received state approval, subject to a referendum in May, for issuance of bonds totalling $55,000,000 to finance civic improvements, including $20,000,000 for school construction and repair, $6,000,000 for improvements to the airport and $3,000,000 for recreational projects.

Water for Denver

Denver, Colo., voters will be asked May 20 to approve a $23,000,000 bond issue to finance a $30,000,000 expansion and improvement program for the city's water system. A $7,000,000 surplus on hand will also be applied to the work.

Expansion plans include a $3,401,000 conduit to carry water to the Moffatt filter plant; improvements to the filter plant and increase in storage capacity by construction of a $15,000,000 reservoir in South Boulder Creek, and replacement of an existing wood-stave pipe with a 90-in. dia. conduit to bring water from the South Platte River to the Marston Lake and Kassler filters.

Cleveland plan ready

With $3,500,000 on hand and certified for construction, and $27,000,000 in a bond issue ready for approval by the city council, Cleveland, Ohio, is ready to embark on an ambitious waterworks expansion program that it hopes to complete in five years.

Work is scheduled to start this year on a covered reservoir and temporary pumping station for the new Nottingham water works; one a 12,900-ft., 48 in. relief main under Chester Ave., and a six-mile tunnel, 10 ft. in diameter, from a point offshore in Lake Erie to the Nottingham plant.

Havens and Emerson, consulting engineers, have prepared plans and specifications for the work, and for a crib to form the intake head in the lake.

Total cost of the expansion program is expected to reach $34,000,000.

Other water projects

During the week many other cities reported action on their current water supply problems.

Pumper By-Passes Main Break—A fire engine, pressed into extra-ordinary service, kept water running when the Board of Water Supply at Honolulu, T. H., had to break a 16-in. main serving one of its rural areas recently to make new connections. Water was carried around the break, through the pumper, and residents got uninterrupted service. Frederick Ohrt, manager and chief engineer for the board, and Fire Chief H. A. Smith, collaborated on arrangements to assure water service.

Canton, Ohio, for example, thought it had saved some $3,000,000 by its failure three years ago to embark on a program of shifting underground water supply sources to a surface system. A survey presented to city officials by the Ranney Water Collector Corp. revealed an untapped underground source north of the city said to be capable of producing 14 mgd.—enough to double the present supply. Cost of drilling, pumping and piping to tap the new source was set at $585,000.

Sparta, Tenn., considered detailed plans for a $350,000 waterworks improvement plan that would include installation of a $200,000 filtration plant and extensions to water lines.

Stanton, Del., reported that a $300,000 pumping station and filtration plant was under construction, designed for a capacity of 4 mgd.

Evansville, Ind., received permission by an act of the state legislature to finance extensions of its water system beyond the city limits, in a move to encourage industrial expansion.

Underground parking

The city council of Philadelphia, Pa., has appropriated $2,000,000 for construction of underground garages and parking facilities and work is scheduled to start immediately upon selection by the council of the sites from a list already submitted to it by Mayor Bernard Samuel and the Philadelphia Committee for the Relief of Traffic Congestion. The proposed sites, all in the central city area, include Reyburn Plaza, the proposed Independence Hall Mall, and the Pennsylvania Boulevard.

City officials have selected the underground garage and parking lot as the best solution to the present day traffic problem in the midtown business section. The subway parking project funds are included in a $11,750,000 construction loan fund for public improvements approved by the council at recent meetings.

Streets for Wilmington

The streets of downtown Wilmington, Del., will get a drastic "face lifting" if the city adopts recommendations included in a 49-page report submitted last week by H. P. Hammond, engineering consultant. Included in recommendations were: Removal of the King Street farmers' curb market to an off-street location; designation of all streets in the central business area as "express streets" between 4:30 and 6 p. m. with all parking prohibited; construction of public parking garages or lots.

Ask airport aid

The City of Houston, Tex., has filed an application for a grant of $2,951,500 from the Civil Aeronautics Authority for airport improvements.

Included in the program to be financed in part by the grant are: Grading, $50,000; access roads, $128,000; apron paving, $500,000, and taxiway paving, $500,000; $810,000 for drainage works; $1,400,000 for paving runways, and $1,775,000 for construction of an administration building.

Sanitary fill for Peoria

The City of Peoria, Ill., will appoint a committee of engineers to investigate the uses of sanitary fill methods for disposal of garbage, to replace present unsightly city dumps. A special election is planned when a comprehensive program is finally presented.

Engineers leave jobs

Low pay scales are causing municipal engineering employees of Columbus, Ohio, to resign, delaying preparation of plans for a $3,000,000 sewer improvement program approved by voters last year, according to Paul W. Maetzel, city engineer.

He indicated that failure of the city council to adjust salary scales upward for engineering personnel has caused the resignation of more than 12 technical men during the last year.

More water for Phoenix

Moving to alleviate a growing shortage of drinking and industrial water facilities, aggravated by last year's drought, the city of Phoenix, Ariz., expects to have new additions to its water system in operation by 1948.

City engineer R. Gail Baker said recently that the city has already let contracts for about $2,676,000 of the $6,000,000 program approved by voters last fall. Most of the contracts have been let for pipe and pipeline work.

Plan for tall buildings

Changes in the city's zoning laws to permit construction of taller buildings in the central part of the city were recommended at Wilmington, Del. The city zoning commission pointed out that the present law, adopted in 1924, places unfair limitations on builders.

Montreal traffic plan

First steps of an elaborate program for traffic relief in Montreal, Que., were revealed recently when city councillors approved a planning fund of $100,000.

Included in the program, in addition to a series of street-widening projects to insure steady traffic flow, is a proposal for an east-west expressway through the city. Engineers said many downtown streets had been widened in sections in past years and elimination of narrow sections is planned.

***War Memorial for Los Angeles**—A $35,000,000 War Memorial Auditorium will make a radical change in the appearance of downtown Los Angeles, Calif., according to an artist's rendering superimposed on a photograph of the area. To be located on a 23-acre site, the structure will seat 30,000 persons, and the tract will have 746 ft. of frontage on Sixth Street. The Greater Los Angeles Plan, Inc., sponsor of the project, announced site selection last week, and said that most of the needed funds for construction had already been subscribed by private interests.*

Steam plant on roof heats Dallas office building

What is believed to be the highest installation of steam boilers ever made was completed recently at Dallas, Texas, where two steel boilers with a capacity of 24,290 sq. ft. of direct steam radiation each were installed on the roof of the 18-story Kirby Building.

Built in 1913, the building was a part of a two-structure development which included the adjoining Adolphus Hotel, and the hotel building was supplied with heating and electrical-generating plants capable of serving both structures. When the Kirby Building was sold by its original owners some years ago, the original arrangement was continued, but recent changes required that the Kirby Building be cut off.

This structure, however, has no sub-basement and no chimney, and its basement and first five floors are occupied by one of the city's most fashionable department stores. Owners decided that rental value of the basement and first floors would prohibit installation of heating equipment there.

Boilers are gas-fired

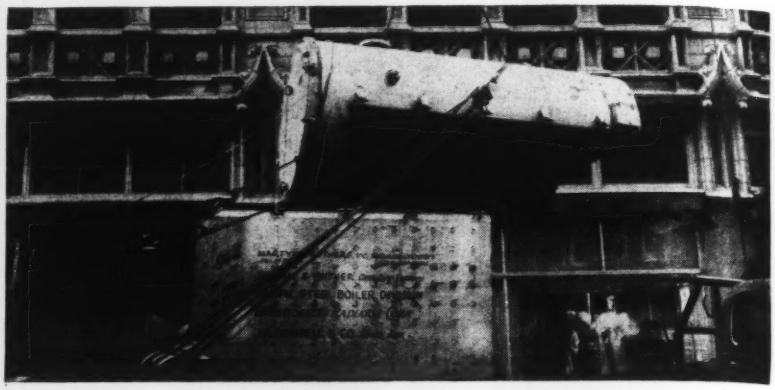
The boilers are to be gas-fired, and condensate will be returned to them by means of pumps. Induced draft fans will eliminate the use of a tall chimney.

The basement condensate pump is used to return condensate from the basement to the roof. It is of the regenerative turbine type directly connected to a 5-hp. motor, and furnished with magnetic starter and hand-off automatic switch. The condensate pumps in the penthouse are of the vertical type with receiver.

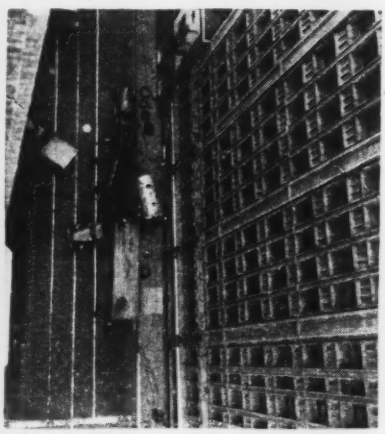
Greatest difficulty of the installation was the hoisting of the heavy units—some of which weighed more than 10,000 lb.—and making provision for future replacement. Engineers designed a demountable steel "A" frame, involving a 24-in. base beam extended over the street to a distance of about 12 ft. from the building. A trolley was attached to roll along the beam and support the hoisting cables, which were powered from the street. At conclusion of the work, the rigging was disassembled and stored on the roof for possible future use.

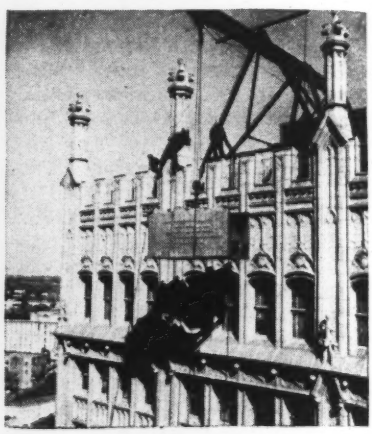
The existing steam system in the building, built to take steam from the adjoining Adolphus Hotel, was changed to accomodate the new arrangement.

Engineers were Zumwalt and Vinther, consulting engineers of Dallas; and boilers were supplied by the Pacific Steel Boiler Division of the U. S. Radiator Corp.

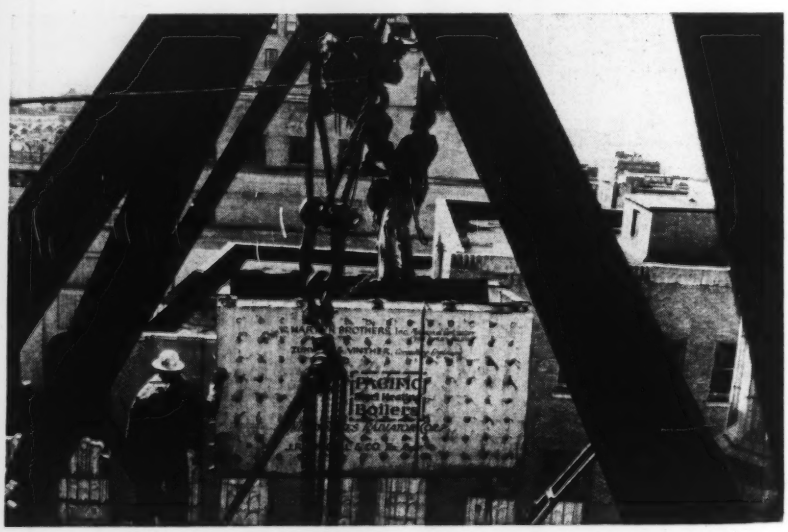


One of the 24,290 sq. ft. direct steam radiation capacity boilers is jockeyed into place under hoisting rig, preparatory to being raised 18 stories for placement on the roof of the Kirby Building at Dallas, Tex., which formerly had been supplied with heat by plant in adjacent building.





Huge trailer-trucks block downtown Dallas streets as they bring parts under the hoisting rig located on the roof. A steel "A" frame was designed for the purpose. Rising slowly toward its bed on the roof of the office building is a firebox of the boilers being installed.



Special steel rig is used to hoist heavy units of steam-heating system to the top of the Kirby Building at Dallas, Texas. Main beam of the rig is a 24-in. steel member, extending 12 ft. over the street below. Rig is demountable and will be used to hoist repair parts.

Housing and airport funds requested

A request for $50,000,000 for housing construction, $20,000,000 for work educational institutions, and $87,500,000 for airport improvements was vealed this week by President Truman.

The housing money would be spent der Title V of the Lanham Act to mplete the work of converting mili- y barracks and other war construc- n into civilian housing that could be ed by educational institutions, munici- alities, and other groups. Congress s already appropriated $445,627,000 finance part of the task of converting e war structures into 200,000 dwelling its and the new appropriation is eeded to complete the program.

Prior to Feb. 1, 1947, allocations had en made for 158,834 units, but rising sts have made it necessary recently suspend 8,357 of these units. It now ppears that with the original funds it ill be possible to provide only about 0,000 units. Of this total 95,451 have en completed and around 55,000 hers are under construction. The using program is being handled by e Federal Public Housing Administra- n of the National Housing Agency.

Educational buildings

The $20,000,000 requested is for con- nuation of construction of additional boratory, office and classroom facili- s at educational institutions attended veterans under the GI Bill of Rights. he work would be done under the anham Act by the Bureau of Com- unity Facilities of the Federal Works gency, surplus war structures being ilized. The new request would com- lete a $100,000,000 appropriation au- orized by the Veterans Education acilities Act (Public Law 697) of the st Congress.

Most of the $87,500,000 requested for nprovement of the national airways stem is expected to be used for in- allation of navigational aids at exist- g fields. However, appropriation of e money would probably avoid the ed to hold back construction sched- led for this fiscal year at 8,000 air- orts under supervision of the Civil eronautics Administration. As out- ned in detail in *ENR* Feb. 20, vol. p. 5, the $45,000,000 Congress has al- ady provided under the 1946 airport t, when combined with local funds ill permit over $70,000,000 of con- uction.

Despite the fact that most of the first ar's appropriation has already been located to specific projects, the Senate ommittee on Interstate and Foreign ommerce in a report released last eek recommended that the new con- uction be withheld and that the oney be used instead to provide radar and other navigation aids at existing fields.

More airport funds requested

Following up its projected construction program for 800 class I, II, and III airports in this fiscal year, ending June 30, CAA has compiled a list of 307 class IV and larger fields to be built or improved during the year beginning July 1. As submitted by the president to Congress, the program would require $58,921,687.

Approval of the request probably would mean that there would be little new construction funds allocated during the fiscal year 1948 for smaller airfields. However, the request for the large fields may face tough sledding in Congress, since the legislative budget, which went to a joint House-Senate conference committee last week, approved a policy of "deferment, other than planning, of newly-authorized public works projects, and their retention on the shelf for utilization in a period of unemployment, unless such projects are esteemed vitally necessary."

Reclamation power plan tops $301 million

A 6-year program of power plant and transmission line construction in the Missouri Basin and other areas, involving a total outlay of $801,070,480 in federal funds, has been outlined in a U. S. Reclamation Bureau report recently submitted to Congressional appropriation committees.

Under the plan, the bureau would construct 33 new power plants by the end of the fiscal year 1952. Construction would also be started on ten additional new plants to be completed after that date.

The program also calls for completion of 9,645 miles of transmission lines during the 6-year fiscal period envisaged, while another 4,154 miles of line would be started during the same period. Most of the lines would be located in the Missouri River basin.

Total costs of the 6-year program are estimated at about $445,000,000 for power plants and $165,000,000 for transmission lines. Estimated costs of completing all projects to be started during the period are set at some $559,000,000 for plants and $242,000,000 for lines. All prices are based upon July, 1946, figures.

McNary Dam work starts in spring, engineer says

Construction work on the McNary Dam site on the Columbia River three miles above Umatilla, Ore., will be started soon after April 1, Col. O. E. Walsh, Portland district Army engineer, has announced.

More than half of the $2,600,000 allocated funds will be available at that time for preliminary work. The balance of the allocated sum will be used to begin construction of the town, lock excavations on the Washington side and railroad spurs.

Colonel Walsh also released recommendations for a 4-dam plan for the lower Snake River project.

Three separate plans, one calling for four dams, another for five and a third for six, have been studied intensively to provide navigation from the Snake River mouth to Lewiston, Ida. The engineers decided that the ratio of benefits to costs would be served best by adoption of the 4-dam plan.

Private power companies file plans for dams

An application formally requesting a preliminary permit for the construction of a new hydro-electric generating station on the Saluda River has been made to the Federal Power Commission. according to S. C. McMeekin, president of the South Carolina Electric and Gas Co.

McMeekin announced plans for the new dam, to be located more than a mile above the junction of the Saluda and Broad rivers. He said the dam would cost $4,152,000 and have an average annual output of close to 46,500,000 kwh. Its superstructure would be 80 ft. high and its length would be 1,250 ft.

Sacandaga power project

The New York Power and Light Corp., Albany, N. Y., has filed with the Federal Power Commission a declaration of intention to construct a hydroelectric project on the Sacandaga River in Saratoga and Warren Counties, just below the Sacandaga Reservoir owned by the state.

The proposed project would consist of an earth dam about 1,400 ft. long and about 112 ft. high with a concrete retaining wall for the east face of the dam. The dam would be located at the Stewarts Bridge site on Sacandaga River about 3 miles upstream from its confluence with the Hudson River and would create a reservoir with an area of about 470 ac.. and a normal usable volume of 1,800 ac. ft.

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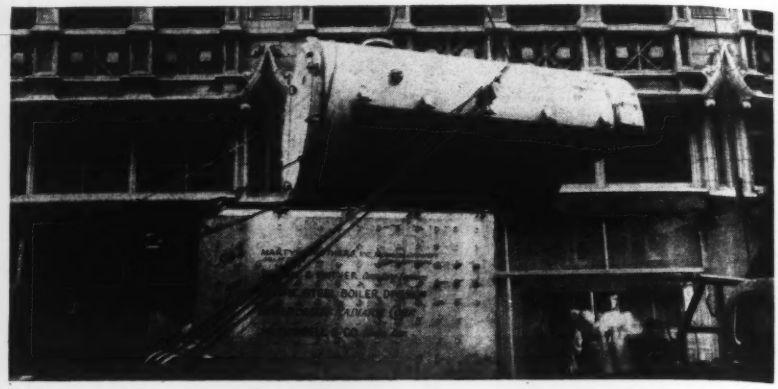

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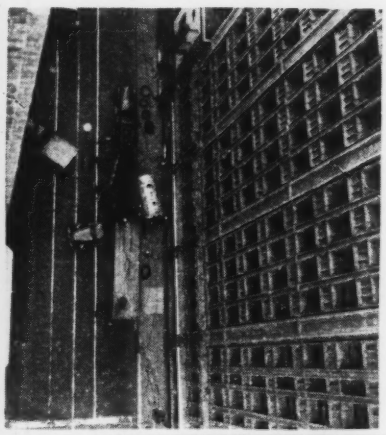

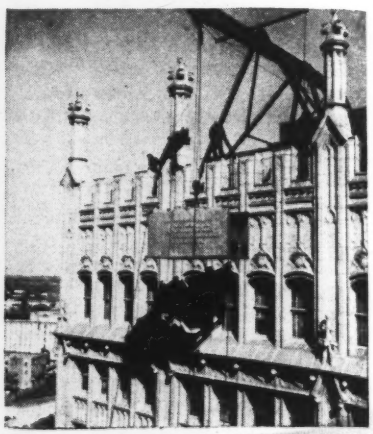

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The housing money would be spent der Title V of the Lanham Act to mplete the work of converting mili- y barracks and other war construc- n into civilian housing that could be ed by educational institutions, munici- lities, and other groups. Congress s already appropriated $445,627,000 finance part of the task of converting e war structures into 200,000 dwelling its and the new appropriation is eeded to complete the program.

Prior to Feb. 1, 1947, allocations had en made for 158,834 units, but rising sts have made it necessary recently suspend 8,357 of these units. It now ppears that with the original funds it ill be possible to provide only about 0,000 units. Of this total 95,451 have en completed and around 55,000 hers are under construction. The using program is being handled by e Federal Public Housing Administra- n of the National Housing Agency.

Educational buildings

The $20,000,000 requested is for con- nuation of construction of additional boratory, office and classroom facili- s at educational institutions attended veterans under the GI Bill of Rights. e work would be done under the nham Act by the Bureau of Com- unity Facilities of the Federal Works and other navigation aids at existing fields.

More airport funds requested

Following up its projected construction program for 800 class I, II, and III airports in this fiscal year, ending June 30, CAA has compiled a list of 307 class IV and larger fields to be built or improved during the year beginning July 1. As submitted by the president to Congress, the program would require $58,921,687.

Approval of the request probably would mean that there would be little new construction funds allocated during the fiscal year 1948 for smaller airfields. However, the request for the large fields may face tough sledding in Congress, since the legislative budget, which went to a joint House-Senate conference committee last week, approved a policy of "deferment, other than planning, of newly-authorized public works projects, and their retention on the shelf for utilization in a period of unemployment, unless such projects are esteemed vitally necessary."

Reclamation power plan tops $301 million

A 6-year program of power plant and

HTLY

UND

McNary Dam work starts in spring, engineer says

Construction work on the McNary Dam site on the Columbia River three miles above Umatilla, Ore., will be started soon after April 1, Col. O. E. Walsh, Portland district Army engineer, has announced.

More than half of the $2,600,000 allocated funds will be available at that time for preliminary work. The balance of the allocated sum will be used to begin construction of the town, lock excavations on the Washington side and railroad spurs.

Colonel Walsh also released recommendations for a 4-dam plan for the lower Snake River project.

Three separate plans, one calling for four dams, another for five and a third for six, have been studied intensively to provide navigation from the Snake River mouth to Lewiston, Ida. The engineers decided that the ratio of benefits to costs would be served best by adoption of the 4-dam plan.

Private power companies file plans for dams

An application formally requesting a preliminary permit for the construction of a new hydro-electric generating station on the Saluda River has been made to the Federal Power Commission. according to S. C. McMeekin, president of the South Carolina Electric and Gas Co.

McMeekin announced plans for the new dam, to be located more than a mile above the junction of the Saluda and Broad rivers. He said the dam would cost $4,152,000 and have an average annual output of close to 46,500,000 kwh. Its superstructure would be 80 ft. high and its length would be 1,250 ft.

Sacandaga power project

The New York Power and Light Corp., Albany, N. Y., has filed with the Federal Power Commission a declaration of intention to construct a hydroelectric project on the Sacandaga River in Saratoga and Warren Counties, just below the Sacandaga Reservoir owned by the state.

The proposed project would consist of an earth dam about 1,400 ft. long and about 112 ft. high with a concrete retaining wall for the east face of the dam. The dam would be located at the Stewarts Bridge site on Sacandaga River about 3 miles upstream from its confluence with the Hudson River and would create a reservoir with an area of about 470 ac.. and a normal usable volume of 1,800 ac. ft.

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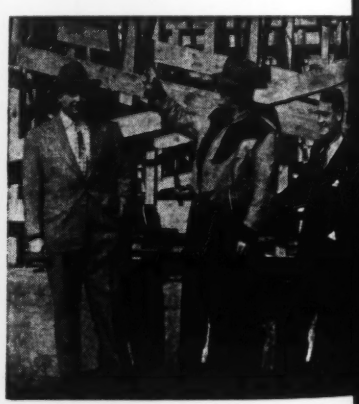

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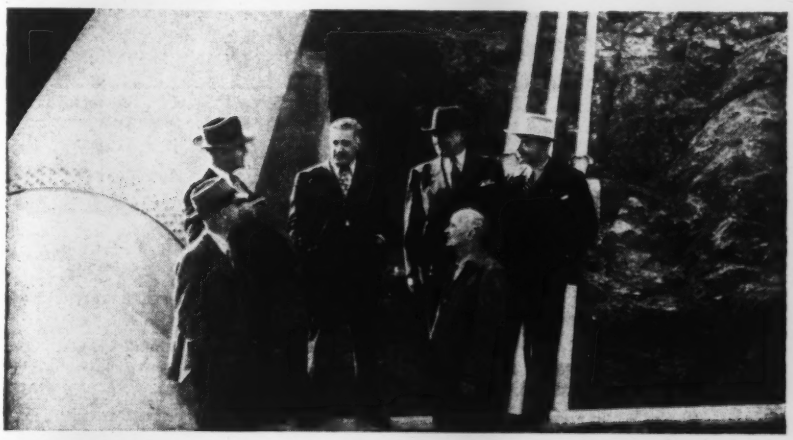

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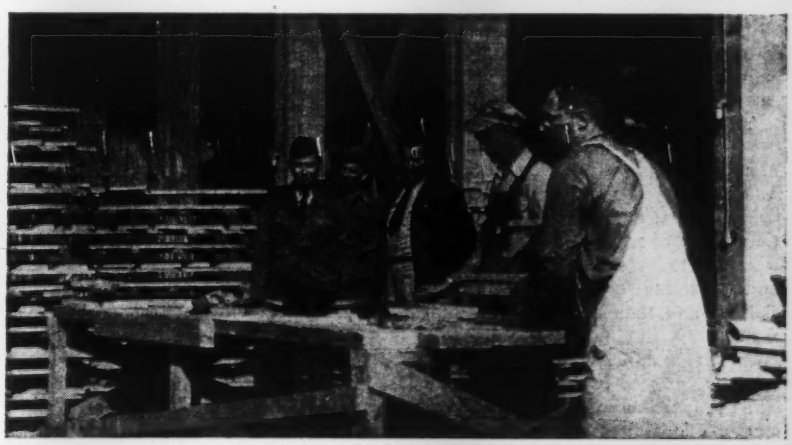

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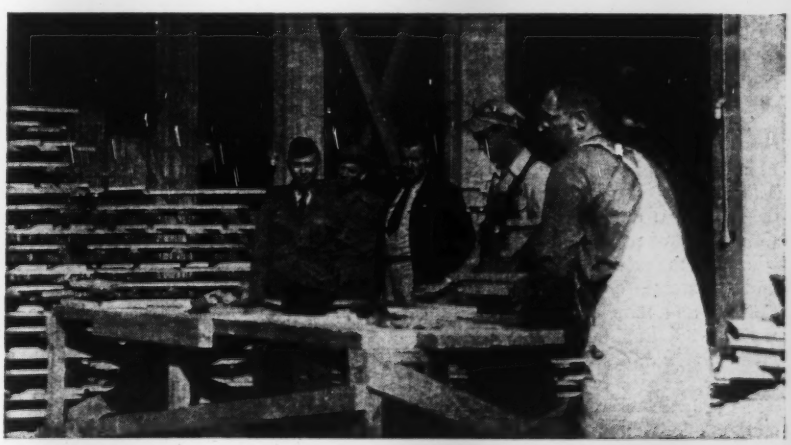

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Survey shows civil engineer students form 11 percent of total enrollment

Proportion may be even greater when underclassmen in engineering schools make their final choice of field of specialization

In order to obtain an idea of what proportion of the students in the greatly enlarged enrollment of engineering schools at the present time have chosen civil engineering as their life work, *Engineering News-Record* recently sent out a questionnaire to a representative cross-section of engineering institutions in the United States and Canada.

Figures received to date indicate that the proportion of civil engineering students in the total enrollment of engineering students is close to 11 percent in both the United States and Canada.

However, a more complete survey recently made by *The Journal of Engineering Education*, covering both graduate and undergraduate enrollments in each branch of engineering in the various engineering schools throughout the United States and Canada, indicates that out of a total of 197,797 students, 28,448 are taking civil engineering, or over 14 percent.

That the figures given in the accompanying tables are subject to a considerable amount of qualification is indicated by the following comments by the heads of civil engineering departments in several of the institutions.

Brown University, Providence, R. I.—"The present total enrollment in the Division of Engineering is 826 students. However, since there is no specialization in our course until the senior year, it is impossible to tell how many of these students expect to concentrate in civil engineering. In our present senior class 23 men are taking civil engineering courses."—LEIGHTON T. BOHL, Chairman, Division of Engineering.

Thayer School of Engineering, Dartmouth College, Hanover, N. H.—"There are 110 engineering students in Thayer School, of whom 45 are students in civil engineering. All our curricula are operated on a 5-year plan whereby students take three years in the undergraduate courses of Dartmouth College and then two years in Thayer School of Engineering. The figures given above apply only to the students actually enrolled in the Thayer School. The proportion of civil engineering students is abnormally high this year because many of these students are hold-overs from our Navy V-12 program in which only civil engineering was offered; and our electrical and mechanical engineering are just getting under way this year and we have very small enrollments in the second-year groups in those curricula."—WILLIAM P. KIMBALL, Dean.

The University of Connecticut, Storrs, Conn.—"The first two years in engineering are the same for all students, and as in most schools the majority of our enrollment is in the first two years. In the two upper years we have from 40 to 50 civil engineering students."—F. L. CASTLEMAN, JR., Dean of Engineering.

Purdue University, Lafayette, Ind.—"In the figures given we do not include freshmen who take a common curriculum for all schools of engineering. We have 37 graduate students taking civil engineering, 118 seniors, 129 juniors and 253 sophomores."—R. B. Wilcox, Head, School of Engineering.

Cornell University, Ithaca, N. Y.—"We are abnormally high in civil engineering at Cornell because only civil, mechanical, chemical and electrical engineering are offered. Most schools have more departments, such as architectural, ceramic, aeronautical, general and others."—HOWARD M. GIFFT, Associate Professor, Sanitary Engineering.

University of Washington, Seattle, Wash.—"Note that the degree-granting departments have students only above the freshman year. All freshman engineering students are in the department

(*Continued on following page*)

RATIO OF CIVIL ENGINEERS TO TOTAL ENGINEERING ENROLLMENT

UNITED STATES

Institution	Total Engineering	Civil Engineering	Percent
University of Alabama, University, Ala.	1,807	262	14.5
University of Arizona, Tucson, Ariz.	868	205	23.6
Polytechnic Institute of Brooklyn, N. Y.	1,324	146	11
Bucknell University, Lewisburg, Pa.	534	96	18
California Institute of Technology, Pasadena, Calif.	367	52	14.2
" " Graduate	307	36	11.7
Case School of Applied Science, Cleveland, Ohio	1,436	118	8.2
Clarkson College of Technology, Potsdam, N. Y.	1,110	137	12.3
University of Connecticut, Storrs, Conn.	1,500	300	20
The Cooper Union, N. Y. City	352	56	15.9
" " Evening	510	51	10
Cornell University, Ithaca, N. Y.	2,348	428	18
Drexel Institute of Technology, Philadelphia, Pa.	1,926	189	9.8
Illinois Institute of Technology, Chicago, Ill.	2,833	151	5.3
Lafayette College, Easton, Pa.	646	79	12.2
Lehigh University, Bethlehem, Pa.	1,792	148	8.2
Massachusetts Institute of Technology, Cambridge, Mass.	4,092	209	5
University of Nebraska, Lincoln, Neb.	768	135	17.6
Northwestern University, Evanston, Ill.	1,041	102	9.8
Princeton University, Princeton, N. J.	600	70	11.6
Purdue University, Lafayette, Ind.	6,640	500	7.5
" Graduate	300	37	12.3
Rutgers University, New Brunswick, N. J.	694	85	12.2
University of South Carolina, Columbia, S. C.	758	242	31.9
Stanford University, California	876	149	20.2
" " Graduate	281	44	15.7
Syracuse University, Syracuse, N. Y. (3 upper classes)	734	79	10.7
University of Texas, Austin, Tex.	3,863	503	13
" " Graduate	190	25	13.2
Thayer School of Engineering, Hanover, N. H.	110	45	40.9
University of Washington, Seattle, Wash.	1,999	232	11.6
Washington University, St. Louis, Mo.	1,135	135	11.8
University of Wisconsin, Madison, Wis.	2,943	390	13.3
" Graduate	100	15	15
Worcester Polytechnic Institute, Worcester, Mass.	653	65	9.9
Yale University, New Haven, Conn. (3 upper classes)	1,044	102	10
" Graduate Division	120	22	18
Average for all institutions			11.1

CANADA

McGill University, Montreal, Que.	1,202	86	7.2
University of Toronto, Toronto, Ont.	4,021	605	15
University of British Columbia, Vancouver, B. C.	1,976	47	2.4
Queens University, Kingston, Ont.	1,671	79	4.8
L'Ecole Polytechnique, Montreal, Que.	451	57	12.6
University of Saskatchewan, Saskatoon, Sask.	1,154	58	5
Nova Scotia Technical College, Halifax, N. S.	196	54	27.5
University of Alberta, Edmonton, Alta.	973	142	14.6
Manitoba University, Winnipeg, Man.	892	72	8
Laval University, Quebec, Que.	220	11	5
University of New Brunswick, Fredericton, N. B.	457	220	47.9
Average for all Canada			10.3

Lumber controls to be lifted by end of March

Government production controls on lumber, millwork, hardwood flooring and softwood plywood, will be removed March 31. Specific directives to be revoked are orders L-358 and L-359.

However, because of millwork shortages, certain restrictions on deliveries of Douglas fir and Western pine shop lumber will be retained in a new order to become effective April 1.

Reports required by orders L-358 and L-359 must be made for the month of March, it was pointed out, and HH and HHH applied or extended before March 31 must be honored.

Canol surplus sale postponed to April 21

The office of the Foreign Liquidation Commission, Department of State, which advertised in the Feb. 20 issue of the *Engineering News-Record* the sale of surplus property of the Canol-1 project with a closing date of March 20, 1947, for bids, has announced the postponement of that date to April 21.

Invitation to bid and a description by parcels and lots may be obtained from the Field Commissioner for Canada and the North Atlantic areas in Room 2037, Temporary Building "R", 4th and Jefferson Drive, S. W., Washington 25, D. C.

Engineering school survey

(*Continued from page* 14)

of general engineering."—R. B. VAN HORN, Head, Department of Civil Engineering.

Stanford University, California—"Mining engineering recently withdrew from our engineering school and is joined with geology; hence our figures are for civil, electrical, mechanical, industrial and general, also engineering science."—LEON B. REYNOLDS, Acting Executive Head, Civil Engineering Department.

Rutgers University, New Brunswick, N. J.—"Figures given are not quite accurate as our freshmen are not required to select a curriculum until the end of the freshman year, and a number of freshmen have not yet indicated their choice."—F. C. MIRGAIN, Associate Professor of Civil Engineering.

Announce plans for work on gas pipelines

The Trans-Continental Gas Pipe Line Co. of Austin, Tex., has asked the Federal Power Commission for an immediate hearing on its construction of a $130,000,000 pipeline to carry gas from Texas to the East. The proposed line would be built to carry 325,000,000 cu. ft. of natural gas a day through a 26-in. pipe. It would begin in Brazoria County, Tex., near Houston, and 1,380 miles northeast to Pennsylvania, Maryland, Delaware, New Jersey and New York.

Work on the new $12,000,000 gas pipe line from Hugoton, Kan., to Denver, Colo., is scheduled to start May 1st—following the granting of a 25-year franchise to the Public Service Co. of Colorado by the voters of Denver.

The new line will be built by the Colorado Interstate Gas Company.

N. Y. industrial code to be modernized

Appointment of eight men to an advisory committee to modernize the New York State Industrial Code rules relating to the protection of persons employed in the construction and demolition industries was announced March 6 by Edward Corsi, State Industrial Commissioner.

"The work of revising and streamlining the code is being undertaken at this time," said Commissioner Corsi, "in anticipation of a marked expansion in building activities in the state, particularly in the housing field."

The advisory committee's work will deal specifically with Industrial Code Bulletin No. 23, providing for the safety of workers in the erection, repair and demolition of buildings or structures. The objective of the committee will be to bring the code up to date.

PERSPECTIVE . . .

Cutting down on surveys

The House Committee on Public Works and the Army's Corps of Engineers are moving to cut down the waste and lost motion in public works construction. The present target is the flood of bills members of Congress introduce annually ordering the corps to make a preliminary survey of a multitude of proposed flood-control and rivers and harbors projects.

In recent years the mere introduction of such a resolution has been tantamount to an automatic order that the survey be made, regardless of cost or impracticality. These resolutions have whisked through Congress with hardly a challenge. Now, with a tremendous backlog of projects authorized and awaiting appropriation of funds, the House committee and Corps of Engineers are cooperating to cut down the number of new orders.

A step in that direction already has been taken within the House committee. The sub-committees on flood control and rivers and harbors, meeting jointly March 6, unanimously approved two resolutions sponsored by Chairman George A. Dondero, of Michigan. They establish committee policy on considering all future proposals for preliminary survey work by the Corps of Engineers.

One resolution requires that each new proposal will be subjected to the closest possible scrutiny to determine the need for a survey, the probable cost and the work to be accomplished. Each member of Congress seeking a new survey will be asked to appear before the committee and state his case. The Corps of Engineers will be asked to submit a cost estimate and any other pertinent data, including any previous reports and the status of the work. The committee has decided to let every request ride for at least 30 days in order to collect the desired preliminary information.

Dondero's second resolution is aimed at eliminating repetition. It provides that hereafter, when the War Department has submitted an unfavorable report on any project, there shall not be a new survey before three years have elapsed.

The committee chairman sponsored the resolutions after a check showed that the Corps of Engineers now has before it 1,164 resolutions for preliminary surveys and that this type of work costs about $4,000,000 annually.

"Many of the surveys result in practically no benefits whatever," Dondero protested. "The Corps of Engineers is backing me wholeheartedly in these two resolutions. It will take off of their shoulders a lot of work that never leads to anything. It will cut expenses and eliminate waste motion. It will let the engineers devote their efforts to more constructive work."

OBITUARY

Lieut. Col. Arthur R. Wellwood, 85, of the Engineer Corps, USA, died in Washington, D. C., March 6. Colonel Wellwood was a veteran of both world wars, having left business to serve in France in the first conflict as a lieutenant of engineers. He had studied at New York University. In 1931 he was appointed chief engineer of the Power Rate Investigating Committee of South Carolina and during the construction of the Saluda hydro-electric project in that state he was resident engineer for Murray & Flood, consulting engineers. Later Mr. Wellwood was head of the division of rates, costs and valuations of the Federal Power Commission, and at one time was in charge of all PWA power projects in Nebraska.

Lawson Ambrose Nicholson, 80, Pacific Northwest civil engineer, died March 1 at his home in Tacoma, Wash. He had served as city engineer for Tacoma, Everett, Steilacoom and Ruston. He was responsible for many of Tacoma's major building projects, including a stadium which is believed to be the first of its kind in the country.

Coleman H. Cook, 54, chief designing engineer of the Texas State Highway Department's bridge division, died in Austin March 1. A graduate of Iowa University, Cook went to Austin in 1928 after serving for a time with the Iowa State Highway Department. As an employe of the Texas Highway Department, Cook designed some of its pricipal bridges. He became chief designer in 1944.

DeWitt Pawling Pugh, a civil engineer for the Pennsylvania Railroad for 48 years, died Feb. 27 at Wayne, Pa.

John M. Peterman, 55, a safety engineer with the Veterans Administration in the Philadelphia, Pa., area, died Feb. 26 at Bethesda, Md. He served during the first world war as a lieutenant in the Army Engineer Corps. He was a graduate of the University of Pennsylvania in civil engineering, 1913.

James Warren Bagley, Lt. Col. Corps of Engineers, (retired) died at Chattanooga, Tenn., Feb. 19. He was a graduate of Washington and Lee University and was an inventor and authority on aerial photogrammetry. Serving 10 years with the U. S. Geological Survey on mapping work in Alaska, and subsequently for 20 years in the Corps of Engineers, he developed the first multi-lens aerial cameras used in mapping. After retirement from the Army in 1935, he lectured at Harvard in aerial photography and mapping, and he was author of a textbook on that subject.

Patrick E. Hickey, 74, construction engineer, died Feb. 25 in Cincinnati, Ohio. He had large real estate interests in Florida, at one time owning four and a half miles of seashore south of Miami. He was construction engineer for various railroads and built a large mileage of roads in Wisconsin, Arkansas and other states. For years he was associated with his brother, Daniel, of Cincinnati, and J. P. Hickey of Columbus in the contracting firm of Hickey Bros. At the time of his death he was associated with his three sons, Raymond, J. Robert and Patrick, Jr. of Cincinnati in the firm of Patrick E. Hickey & Sons.

Oliver Cushman, 61, for the last 14 years an engineer in the Public Works Department at Newport, R. I., died in that city Feb. 26. He was born in Manchester, N. H., and was a graduate of the Thayer School of Engineering, Dartmouth College in 1909.

J. Bradford Dickinson, 75, retired civil engineer for the Texas & Pacific Railway at Henderson, Tex., died there Feb. 13.

John M. Clifton, 64, of Spokane, Wash., Pacific Northwest contractor and president of the firm of Clifton & Applegate, died Feb. 27 in Spokane. He was graduated from Oberlin College and had lived in the Pacific Northwest since 1905, first in Montana and since 1913 in Spokane. He was past president of the Spokane chapter of the Associated General Contractors and a director of the national organization. His firm, affiliated with Henry George, completed $23,000,000 in war contracts in the last few years.

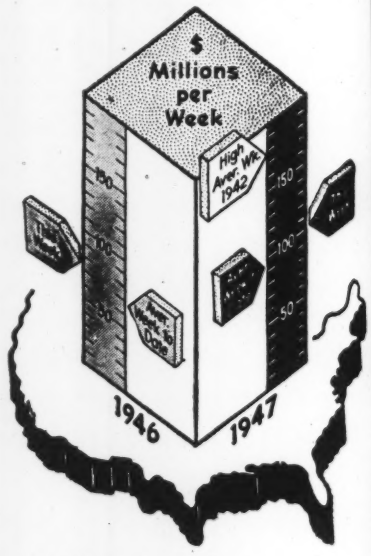
MAJOR MEETINGS

Mississippi Valley Conference of State Highway Departments, 38th annual meeting, Edgewater Beach Hotel, Chicago, Ill., Mar. 14-15.

American Railway Engineering Assn., Palmer House, Chicago, Ill., Mar. 18-19.

American Society of Civil Engineers, spring meeting, Westward Ho Hotel, Phoenix, Ariz., April 23-25.

CONSTRUCTION ACTIVITY



As Reported this week to ... *Engineering News-Record*

CONTRACT VOLUME

Continental U. S. Only (Thousands of Dollars)

	Week of Mar. 13 1947	Cumulative 1947 (11 wks.)	Cumulative 1946 (11 wks.)
Federal	$2,207	$78,948	$79,313
State & Mun.	31,831	261,344	161,068
Total Public.	$34,038	$340,292	$240,381
Total Private	69,294	678,372	499,059
U. S. Total..	**$103,332**	**$1,018,664**	**$739,440**

WHERE CONSTRUCTION ACTIVITY ORIGINATED THIS WEEK

Dollar Volume (Thousands)

Type of work	This Week	Cumulative 1947 (11 wks.)	Cumulative 1946 (11 wks.)
Waterworks	$2,232	$22,269	$11,050
Sewerage	778	17,559	7,842
Bridges	4,800	32,568	18,758
Highways	14,749	103,248	87,033
Earthwork, Waterways	1,254	25,036	44,451
Buildings, Public.	8,421	93,651	52,548
Industrial	14,813	172,093	211,474
Commercial ...	49,978	400,812	253,837
Unclassified	6,307	151,428	52,447

NOTE: Minimum size projects included are: Waterworks and waterway projects, $22,500; other public works, $40,000; industrial buildings, $55,000; other buildings, $205,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1947 (11 wks.)	Cumulative 1946 (11 wks.)
NON-FEDERAL	$225,159	$169,334
Corporate Securities	23,688	74,487
State and Municipal	201,471	94,847
FEDERAL	.....	158,320
**Total Capital ..... **	**$225,159**	**$327,654**

ENR INDEX NUMBERS

Index Base = 100		1913	1926
Construction Cost.	Mar. '47	391.93	188.40
Building Cost....	Mar. '47	298.82	161.53
Volume	Feb. '47	197	86

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